

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
Before the Board of Patent Appeals and Interferences

In re Patent Application of

Atty Dkt. SCS-540-551

C# M#

Confirmation No. 5875

KAYE

TC/A.U.: 3725

Serial No. 10/525,063

Examiner: T. Bonk

Filed: February 18, 2005

Date: July 7, 2008

Title: METHOD AND TOOL FOR FORMING A BRACKET IN COMPOSITE MATERIAL  
AND BRACKET

**Mail Stop Appeal Brief - Patents**

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450



1/K AF \$

Sir:

☐ Correspondence Address Indication Form Attached.

☐ **NOTICE OF APPEAL**

Applicant hereby **appeals** to the Board of Patent Appeals and Interferences  
from the last decision of the Examiner twice/finally rejecting  
applicant's claim(s).

\$510.00 (1401)/\$255.00 (2401) \$

☒ An appeal **BRIEF** is attached in the pending appeal of the  
above-identified application .

\$510.00 (1402)/\$255.00 (2402) \$ 510.00

☐ Credit for fees paid in prior appeal without decision on merits

-\$ ( )

☐ A reply brief is attached.

(no fee)

☐ Petition is hereby made to extend the current due date so as to cover the filing date of this  
paper and attachment(s)

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**TOTAL FEE ENCLOSED \$ 510.00**

☒ **CREDIT CARD PAYMENT FORM ATTACHED.**

Any future submission requiring an extension of time is hereby stated to include a petition for such time extension.  
The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, in the fee(s) filed, or  
asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this  
firm) to our **Account No. 14-1140**. A duplicate copy of this sheet is attached.

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By Atty: Stanley C. Spooner, Reg. No. 27,393

Signature: \_\_\_\_\_



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

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COMPOSITE MATERIAL AND BRACKET

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**APPEAL BRIEF**

On Appeal From Group Art Unit 3725

J

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In re Patent Application of

KAYE

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July 4, 2008

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**APPEAL BRIEF**

Sir:

**I. REAL PARTY IN INTEREST**

The real party in interest in the above-identified appeal is AIRBUS UK LIMITED by virtue of an assignment of rights from the inventors to BAE SYSTEMS plc recorded February 18, 2005 at Reel 17051, Frame 0827 and a subsequent assignment from BAE SYSTEMS plc to AIRBUS UK LIMITED recorded April 20, 2006 at Reel 017791, Frame 0981.

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## **II. RELATED APPEALS AND INTERFERENCES**

There are believed to be no related appeals, interferences or judicial proceedings with respect to the present application, other than the Pre-Appeal Brief Request for Review filed April 21, 2008.

## **III. STATUS OF CLAIMS**

Claims 1-5 and 10 stand rejected in the final Official Action mailed December 21, 2007 (Paper No. 09262007) with claims 6-9 being withdrawn by the Examiner. Claims 1, 3-5 and 10 are rejected under 35 USC §103 as unpatentable over Gilb (US Patent 4,410,294) in view of Fogg (U.S. Patent 4,210,694). Claims 1, 2, 4, 5 and 10 stand rejected under 35 USC §103 as being unpatentable over Gilb in view of Machida (U.S. Patent 4,784,920). The above rejections of claims 1-5 and 10 are appealed.

## **IV. STATUS OF AMENDMENTS**

No further response has been submitted with respect to the Final Rejection in this application other than the filing of a Pre-Appeal Brief Request for Review which decision was mailed June 4, 2008 (Paper No. 20080604).

**V. SUMMARY OF THE CLAIMED SUBJECT MATTER**

Appellants' specification and figures provide an explanation of the claimed invention set out in independent claim 1, with each claimed method step addressed as to its location in the specification and in the figures.

“1. A method of forming a bracket including the steps of:

(i) cutting out a blank [blank 50 as shown in Figure 5 and described on page 8, lines 23-29 and elsewhere in the spec] from a sheet of composite material, the blank [50] having a central portion including at least one fold line [fold line 52 as shown in Figure 5 and described on page 8, lines 24-26 and elsewhere in the spec] defining first and second regions of the blank [regions 54 & 56 as shown in Figure 5 and described on page 8, lines 24-26 and elsewhere in the spec], the fold line extending only partially across the blank and creating non-folding portions of said blank at each end of the fold line,

and then, using a forming tool

(ii) undertaking a bending operation to bend the central portion of said blank about the fold line [52] only to create a predetermined angle between said first and second regions [54 & 56] to form the required three-dimensional shape [blank 50 as shown in Figure 6 and described on page 9, lines 1-9 and elsewhere in the spec],

(iii) curing the bracket”

## **VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

Claims 1, 3-5 and 10 stand rejected under 35 USC §103 as being unpatentable over Gilb (U.S. Patent 4,410,294) in view of Fogg (U.S. Patent 4,210,694).

Claims 1, 2, 4, 5 and 10 stand rejected under 35 USC §103 as unpatentable over Gilb in view of Machida (U.S. Patent 4,784,920).

## **VII. ARGUMENT**

Appellants’ arguments include the fact that the burden is on the Examiner to first and foremost properly construe the language of the claims to determine what structure and/or method steps are covered by that claim. After proper construction of the claim language, the burden is also on the Examiner to demonstrate where a plurality of references (in the case of an obviousness rejection) teaches each of the method steps recited in independent claim 1.

The Court of Appeals for the Federal Circuit has noted in the case of *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick*, 221 USPQ 481, 485 (Fed. Cir. 1984) that “[a]nticipation requires the presence in a single prior art



reference disclosure of each and every element of the claimed invention, arranged as in the claim."

Furthermore, the Court of Appeals for the Federal Circuit has stated in the case of *In re Rouffet*, 47 USPQ2d 1453, 1458 (Fed. Cir. 1998)

to prevent the use of hindsight based on the invention to defeat patentability of the invention, this court **requires** the examiner to show a **motivation** to combine the references that create the case of obviousness. In other words, the Examiner **must show reasons** that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed. (Emphasis added).

In its recent decision, the U.S. Supreme Court in *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385 (April 2007), held that it is often necessary for a court to look to interrelated teachings of multiple patents, the effects of demands known to the design community or present in the marketplace and the background knowledge possessed by a person of ordinary skill in the art in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. The Supreme Court held that "[t]o facilitate review, this analysis should be made explicit." *Id.* at 1396.

The Supreme Court in its *KSR* decision went on to say that it followed the Court of Appeals for the Federal Circuit's advice that "rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be

some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness” (the Supreme Court quoting from the Court of Appeals for the Federal Circuit in *In re Kahn*, 78 USPQ2d 1329 (Fed. Cir. 2006)).

**A. The Examiner admits that Gilb (U.S. Patent 4,410,294) fails to teach “the composite material and bending operation completed before the curing”**

Appellant’s claim 1 requires the steps of “cutting out a blank from a sheet of composite material” and “undertaking a bending operation” prior to “curing the bracket” (official notice is taken that a composite bracket cannot be bent after curing and therefore the claim inherently requires a pre-curing “bending operation”).

The Examiner admits on page 3 of the Final Rejection that Gilb fails to teach (a) the step of “cutting out a blank from a sheet of composite material;” (b) any other of the claimed interrelationships specified in the “cutting out” step; (c) the claimed “bending operation” step a composite material blank; or (d) the “curing the bracket” step (“Gilb et al. discloses the invention substantially as claimed except for the composite material and bending operation completed before curing.” Final Rejection, page 3, last three lines).

Even though the Examiner words her admission in the form of two claimed features, the admitted lack of a composite material disclosure mandates that Gilb cannot teach the “cutting” step, the “bending operation” step or the “curing” step and thus is actually an admission that Gilb fails to teach all three steps recited in

Applicant's independent claim 1, i.e., the step of "cutting out" a blank of composite material, "undertaking a bending operation" to bend the composite blank into a bracket and post bending "curing the bracket" (the post "bending" curing as specific in the claim is admitted by the Examiner's statement "bending operation completed before the curing" on Page 3, last three lines).

The Examiner's admissions regarding the Gilb patent and the claimed method steps are very much appreciated and are believed to dispose of all issues regarding obviousness, as will be seen.

**B. The Examiner's acknowledgment that Fogg and Machida teach composite material handling does not suggest the claimed composite material blank.**

Appellant's claim 1 requires that the composite blank which is admittedly missing from the glib reference, to have a number of claimed interrelationships, i.e., (a) "a central portion including at least one fold line defining first and second regions of the blank;" (b) the claimed "fold line" extends "only partially across the blank;" and (c) the "creating non-folding portions of said blank at each end of the fold line."

Composite materials and conventional methods of shaping and working those materials are old. The Fogg and Machida references teach such conventional composite forming techniques. However, the Examiner fails to identify any teaching that such composite forming techniques would or could be

combined with the stamping out of metal blanks or vice versa, that metal shaping techniques could be used with composite materials.

The Examiner makes no allegation that Fogg or Machida teach the missing claimed interrelationships, i.e., that the claimed blank (a) has “a central portion including at least one fold line defining first and second regions of the blank” or (b) a “fold line extending only partially across the blank” or (c) “creating non-folding portions of said blank at each end of the fold line.” Without the Examiner’s allegation that **all three** of these claimed interrelationships are disclosed in the combination of cited references, no rejection under obviousness can be maintained.

In the Fogg reference, fold lines 44, 30 and 48 extend all the way across the entire width of the blank. Fold lines 34 and 36 extend effectively across the entire blank, as slots 50 and 52 are mere extensions of fold lines 34 and 36. There is no non-folding portion of the blank at either end of the fold lines 34 and 36 (or 44, 30 and 48 for that matter) let alone both ends as claimed.

Machida, in that it illustrates cross-sections of a panel to be bent, does not illustrate anything at the end of the single fold line (there is only a single fold line and it is believed to extend into and out of the plane of the page). There is certainly no disclosure in Machida of any structure at any end of the fold line, let alone the creation of any non-folding portions of the blank.

As a result of the above, neither Fogg nor Machida teach any of the three recited interrelationships required of claim 1 for the composite blank.

**C. The Examiner fails to provide any “reason” for combining Gilb (dealing with metal bending configurations) with either Fogg or Machida (teaching composite technology)”**

Assuming only for the purpose of argument that every claimed aspect of the present invention is disclosed in the Gilb/Fogg combination or in the Gilb/Machida combination, the Examiner has failed to provide any “explicit” analysis of why one of ordinary skill in the art would be motivated to combine the cited references, as required by the US Supreme Court in *KSR* as noted above.

As noted, the Court in *KSR* held that “[t]o facilitate review, this analysis should be made explicit.” *Id.* at 1396. The Examiner has simply failed to provide any “explicit” analysis as to any rationale or motivation for combining the references and thereby evidences a clear failure to establish a *prima facie* case of obviousness.

Should the Examiner argue that the single sentence on page 4, lines 1-4 of the Final Rejection meets the burden of providing an “explicite” analysis a simple examination will show the inadequacy. The statement reads “Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to change the blank’s material composition and the curing ability of this composition in order to provide a [sic] element with ‘high accuracy . . . good

workability ... (and) integrally hardened.’ Column 2, lines 10-55.” However, the Examiner fails to note which of the references she is quoting from. Since the cited portion does not fit any particular portion of Gilb or Fogg, Appellant assumes that this is a reference to the “Summary of the Invention” portion of Machida which is at column 2, lines 10-55.

Quite clearly, any citation in Machida does not provide an “explicit” analysis for picking and choosing method steps from the Gilb and Fogg references and thus the Examiner has not met her burden of setting out a *prima facie* case of obviousness.

Moreover, even with respect to the Gilb/Machida combination, the Examiner has failed to provide the required analysis. The partial quotations believed to be taken from the Machida reference (“high accuracy” column 2, line 15, “good workability” at line 16 and “integrally hardened” at lines 27-28) comprises generic benefits but there is no indication that such composite benefits could be applied to the metal plate stamping and bending process of Gilb.

As noted above, the Supreme Court in its *KSR* decision adopted the Federal Circuit’s rational that “rejections on obviousness grounds cannot be sustained by mere conclusory statements . . . .” (emphasis added). The Examiner’s only statement with respect to the Gilb/Fogg combination is the “mere conclusory statement” and there is no disclosure that Fogg recognizes any benefit in applying all three of the claimed interrelationships to the shape of the metal portion of Gilb.

The Examiner's reference to "high accuracy . . . good workability . . . (and) integrally hardened" simply does not provide any motivation for combining method steps from the Gilb and Fogg references.

The Examiner's only rationale for the Gilb/Machida combination is stated on page 4, section 3 of the Final Rejection as

"Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to change the blank's material composition and the curing ability of this composition in order to create a structural fitting (bracket) that 'has adequate strength to transfer the necessary loads with a minimum of weight . . . (with) low cost means of fabricating' Column 1, lines 55+ - Column 2, lines 1-22."

However, this quoted portion, uncited by the Examiner, is not found in either the Gilb or Machida references, but it does appear in the Fogg reference ("has adequate strength . . . minimum weight" is at column 1, lines 62-64 and "low cost means of fabricating" is at column 2, line 12). Thus, there is no rationale or motivation expressed by the Examiner that would motivate one of ordinary skill to pick and choose the steps from the Gilb and Machida and then combine them in the manner of Claim 1.

Moreover, as noted above, the Examiner makes only the "mere conclusory statement" that it would be obvious "to change the blank's material composition and the curing ability of this composition in order to create a structural fitting (bracket) that 'has adequate strength to transfer the necessary loads with a minimum of weight . . . (with) low cost means of fabricating' but does not provide

any rationale for picking and choosing method steps for the Gilb and Machida references and combining them in the manner of claim 1, especially with the three missing claimed interrelationships.

Accordingly, in view of the above, the Examiner has simply failed to meet her burden of establishing a *prima facie* case of obviousness by failing to provide any explicit analysis as to why she picks and chooses particular method steps and ignores others from the Gilb, Fogg and Machida references and then combines the chosen steps with the three required interrelationships in a manner only taught by Applicant's independent claim 1 (and claims dependent thereon). The Examiner has simply failed to set out a *prima facie* case of obviousness of claim 1 in view of the cited prior art.

**D. The Examiner fails to appreciate that both the Fogg and Machida references teach away from the features of Applicant's independent claim 1**

As noted above, both the Fogg and Machida references teach that (1) the fold line extends completely across the blank and (2) that no non-folding portion of the blank exists at both ends of the fold line.

In the Fogg reference, all of the portions which are beyond any fold line are always folded, i.e., there are no "non-folding portions." Thus, Fogg would clearly teach to one of ordinary skill in the art that the fold line should extend all the way across any blank and that any portions beyond the fold line should always be



folded and thus would lead those of ordinary skill in the art away from the claim 1 specified interrelationships.

Machida teaches only a single fold line, does not teach the fold line extending only partially across the blank and certainly does not teach any non-folded portions at either end of the fold line.

The Examiner provides no basis or rationale as to why one of ordinary skill in the art would ignore the teachings of both Fogg and Machinda to (1) have a fold line extend all the way across the blank and (2) have no non-folded portion at either end of the fold line. This teaching is accordingly directly contrary to the requirements of independent claim 1 as noted and clearly rebuts any *prima facie* case of obviousness, even if one were set out by some combination of the Gilb, Fogg and Machida references.

Thus, the teaching of both secondary references would lead one of ordinary skill in the art away from Applicant's claimed blank, i.e., which requires "the fold line extending only partially across the blank" and "creating non-folding portions of said blank at each of the fold line." If Fogg and Machida are relied upon for teaching basic composite construction, the Examiner must explain how one of ordinary skill in the art would ignore the teachings contained in Fogg and Machida and why one would instead substitute the metal forming pattern disclosed in Gilb.

The Examiner simply does not explain why one ignores the Fogg and Machida teachings even if a *prima facie* case of obviousness had been made out in

the Official Action. Clearly any case has been rebutted by this contrary teaching in each of the secondary references.

**E. The Examiner's fails to support her rejection of claims 1, 3-5 and 10 under §103(a) over Gilb and Fogg**

As noted in sub-section A above, the Examiner admits on page 3 of the Final Rejection that Gilb fails to teach "the composite material" and the "bending operation completed before the curing." Given that this admission is an apparent admission that Gilb fails to teach the claimed steps of "cutting" or "undertaking," Gilb clearly cannot teach the third recited step of "curing." Thus, Gilb as noted in section A above, clearly fails to teach any of the three steps recited in Applicant's independent claim 1.

As noted in section B above, because the Examiner acknowledges that Fogg does not teach composite material blank having the characteristic specified or the claimed "fold line" and its specified characteristics, even if Gilb and Fogg are combined they cannot disclose or render obvious Applicant's claim 1 combination of method steps. Accordingly, because the Gilb/Fogg combination does not teach the claim 1 method steps and interrelationships, the Examiner fails to meet her burden of establishing a *prima facie* case of obviousness with respect to claim 1 (or claims 3-5 and 10 dependent thereon).

Moreover, it is not sufficient for the Examiner to merely point out where various method steps are cited in unrelated public disclosures. As noted above, in

Section C, the U.S. Supreme Court requires some “explicit” analysis as to how or why the Examiner believes the combination of elements chosen as to how one of ordinary skill in the art would be motivated to pick and choose elements from various references and then combine them in the manner disclosed only in Applicant’s claims.

The Examiner has simply failed to provide any reason other than a “mere conclusory statement” for combining the references. The Supreme Court in its *KSR* decision noted above indicated that “rejections on obviousness grounds cannot be sustained by mere conclusory statements.”

As a result, the Examiner has failed to establish any *prima facie* case of obviousness in which the claimed method steps are shown in at least one of the combined references along with an explicit analysis of a rationale for combining those elements from the separate references.

Finally, as noted in subsection D, the Examiner fails to acknowledge or appreciate that the Fogg reference teaches away from Applicant’s claimed combination of method steps in that (a) it requires the fold line to extend completely across the blank and that (b) there be no non-folding portion of the blank existing at either end of the fold line. Accordingly, even if the Gilb and Fogg references somewhere disclosed the claimed method steps (which they do not) and even if the Examiner had provided some explicit analysis of a rationale for combining for picking and choosing and subsequently combining elements

from the various references (which she does not) and thus have established a *prima facie* case of obviousness, any *prima facie* case is clearly rebutted by the contrary teachings contained in the Fogg reference.

As a result of the discussion in Sections A-D above, any *prima case* of obviousness either has not been properly made or has clearly been rebutted.

**F. The Examiner's fails to support her rejection of claims 1, 2, 4, 5 and 10 under §103(a) over Gilb and Machida**

As noted above in section A, Gilb fails to teach the composite material and bending operation completed before the "curing" step. As noted in section B above, the Examiner fails to demonstrate where Machida teaches the claimed interrelationships, i.e., the composite material blank and the "fold line" which extends only partially across the blank with "non-folding portions" at each end of the fold line.

Accordingly, even if Gilb and Machida were combined as suggested by the Examiner, the features of independent claim 1 (and claims 2, 4, 5 and 10 dependent thereon) have not been demonstrated to be present, i.e., these all claimed method steps are not present somewhere in the combination of Gilb and Machida. Accordingly, without all claimed method steps being disclosed somewhere in the combined references there is no *prima facie* case of obviousness and any further rejection thereunder is respectfully traversed.

Additionally, as noted subsection C above, the Examiner fails to provide any “explicit” analysis of any rationale for combining Gilb with Machida. There is no reason why one of ordinary skill in the art would combine method steps for creating a stamped sheet metal product with the composite materials disclosed in the Fogg and Machida references.

As noted above in the *KSR* decision, the Examiner bears the burden of not only demonstrating that the claimed method steps are contained in the combination of references but establishing that there is some “reason” or “motivation” for combining the references in the claimed manner. Here the Examiner has simply failed to meet her burden of providing some rationale for combining bits and pieces of the two references. This failure is further evidence that the Examiner has simply failed to establish *prima facie* case of obviousness.

Finally, as noted in subsection D above, the Machida references also teaches away from combining its teaching with the Gilb reference. Accordingly, even if there were a disclosure of all claimed method steps contained somewhere in the Gilb/Machida combination and even if there were some reason to pick and choose method steps from the references, thereby establishing a *prima facie* case of obviousness, that obviousness case is clearly rebutted by the contrary teachings in the Machida reference, i.e., a fold line extending all the way across the blank with no non-folded portions at either end of the fold line. Thus, the recognition

that Machida teaches away from Applicant's claimed combination of method steps clearly rebuts any *prima facie* case of obviousness.

In view of the above Sections A-D, there is simply no *prima facie* case of obviousness of claims 1, 2, 4, 5 and 10 under 35 USC §103 over Gilb and Machida and even if one had been set out, the Machida and Gilb references both clearly teach away from a combination of references thereby rebutting any case of obviousness.

### **VIII. CONCLUSION**

The Examiner's admission regarding the failure of the Gilb disclosure to disclose anything relating to composite engineering is very much appreciated. While the Fogg and Machida references teach some general concepts of composite engineering, they do not teach method steps or interrelationships which are missing from the Gilb reference. Even if all method steps and step interrelationships were shown in the three references, the Examiner provides no analysis for picking and choosing elements from the separate references and then combining them in the manner of Applicant's claims. Finally, the Examiner ignores the contrary teachings of the Fogg and Machida references and fails to explain why one of ordinary skill in the art would not be led towards these contrary conclusions and away from the claimed invention. This contrary teaching of the Fogg and Machida references comprises a complete rebuttal of any *prima*

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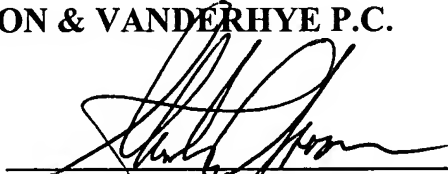
*facie* case of obviousness even if one had been made, which, as noted above, has been disputed.

As a result of the above, there is simply no support for the rejection of Applicant's independent claim 1 or claims dependent thereon under 35 USC §103. Applicant respectfully requests that the Board find that the application is allowed on the existing claims and prosecution on the merits should be closed.

Respectfully submitted,

**NIXON & VANDERHYTE P.C.**

By: \_\_\_\_\_



Stanley C. Spooner  
Reg. No. 27,393

SCS:maa  
Enclosure

## **IX. CLAIMS APPENDIX**

1. A method of forming a bracket including the steps of:
  - (i) cutting out a blank from a sheet of composite material, the blank having a central portion including at least one fold line defining first and second regions of the blank, the fold line extending only partially across the blank and creating non-folding portions of said blank at each end of the fold line,  
and then, using a forming tool
  - (ii) undertaking a bending operation to bend the central portion of said blank about the fold line only to create a predetermined angle between said first and second regions to form the required three-dimensional shape,
  - (iii) curing the bracket.
2. A method of forming a bracket according to claim 1 wherein the bending operation and curing are concurrent.
3. A method of forming a bracket according to claim 1 wherein the bending operating is completed before curing begins.
4. A method of forming a bracket according to claim 1 wherein said undertaking step includes setting the forming tool to create different values of said



predetermined angle allowing different three-dimensional shaped brackets to be formed.

5. A method of forming a bracket according to claim 1 including the step of undertaking a further bending operation to bend the blank about a further fold line.

10. A method of forming a bracket according to claim 1 wherein the fold line defines substantially planar first and second regions of the bracket, and after said bending operation the first region of the bracket extends either side of the plane of the second region of the bracket.

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**X. EVIDENCE APPENDIX**

None.

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**XI. RELATED PROCEEDINGS APPENDIX**

None.